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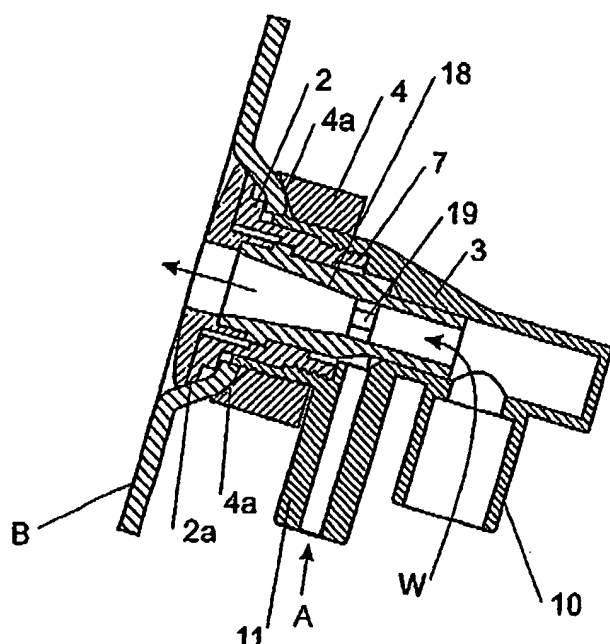
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- Published:
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A SPA BATH FITTING AND SPA BATH



(57) Abstract: A spa bath includes at least one spa jet fitting having a front face exposed to the interior of the bath cavity which does not protrude beyond the surface of the bath wall (B) around the spa fitting. Preferably at least a major portion of the front face of the fitting is substantially flush with the surrounding surface of the bath wall. A spa bath fitting includes a front part (2) including a wide diameter front face (1) which is exposed to the interior of the bath when the fitting is mounted in the side wall or base of a bath, a rear part (3) which is positioned on the rear side of the bath wall or base when the fitting is mounted in a bath and with which the front part is threadedly connected, and a back nut (4) mounted on the rear part for fixing the fitting in the bath wall or base.

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A SPA BATH FITTING AND SPA BATH

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FIELD OF INVENTION

- 5 The invention relates to fittings as are used in spa baths and pools as spa outlets or jets, and inlet fittings.

BACKGROUND OF THE INVENTION

- 10 A spa bath provides jets of water into the bath from a number of spa outlet fittings or spa jets positioned around the interior of the bath cavity. Generally water is drawn from the bath via an inlet fitting and is pumped through pipes around the exterior of the bath, which are boxed in or covered by panels during installation of the bath, and back into the bath through the spa jets.

- 15 Generally air is also delivered to the spa jets, which mixes as bubbles with the water delivered from the spa jets.

- Conventionally spa jets include a raised adjustment ring which sits proud of the interior
20 surface of the bath cavity. By rotating the adjustment ring a user may adjust the strength of the water flow exiting from the spa jet.

SUMMARY OF THE INVENTION

- 25 It is an object of the invention to provide an improved or at least alternative form of spa bath fitting or spa bath.

- In broad terms in one aspect the invention comprises a spa bath including at least one spa fitting having a front face exposed to the interior of the bath cavity which does not
30 protrude beyond the surface of the bath wall around the spa fitting. Preferably at least a major portion of the front face of the spa fitting is substantially flush with the surrounding surface of the bath wall.

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In broad terms in another aspect the invention comprises a spa bath fitting for mounting in a recess formed in the wall of a bath and having inwardly angled side walls, the fitting comprising a front part which is exposed to the interior of the bath in use and which includes an edge portion about the periphery of the front part which is tapered with reducing diameter toward a rear part of the fitting, which tapered peripheral edge portion of the front part assists in centering the fitting in the recess in the side wall of the bath.

In broad terms in another aspect the invention comprises a spa bath fitting for mounting in a recess formed in the wall of a bath and having inwardly angled side walls, the fitting comprising a rear part or back nut having a leading edge which contacts the rear surface of the recess in the bath wall, which leading edge is tapered with a reducing diameter toward a rear part of the fitting which assists in centering the fitting in the recess in the side wall of the bath.

15

In broad terms in another aspect the invention comprises a spa bath fitting including:

a front part including a wide diameter front face which is exposed to the interior of the bath when the fitting is mounted in a bath,

a rear part which is positioned on the rear side of bath wall when the fitting is mounted in a bath and with which the front part is threadedly connected, and

a back nut mounted on the rear part for fixing the fitting in the bath wall.

Such a fitting comprising separate threadedly coupled front and rear parts and a separate back nut for fixing the fitting to the bath enables the position of the front face of the fitting to be adjusted relative to the rear part separate from tightening of the back nut to fix the fitting in place. This enables fine adjustment during installation of the fitting of the position of the exposed front face of the front part relative to the bath wall.

Typically the fitting will be an outlet fitting or spa jet but alternatively the fitting may be an inlet fitting.

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In this specification the term "spa bath" is intended to include spa baths and spa pools, including and also known as spas, whirlpools, and jacuzzis.

BRIEF DESCRIPTION OF THE DRAWINGS

5

A preferred form spa bath outlet fitting or spa jet is described with reference to the accompanying drawings by way of example and without intending to be limiting, wherein:

10 Figure 1 is a view from above a bath,

Figure 2 is a side view of a preferred form fitting shown mounted in a section of bath wall,

15 Figure 3 is a cross section view along line I-I of Figure 2,

Figure 4 is a view in the direction of arrow II of Figure 2 of the front face of the spa jet (in a circular section of bath wall), and

20 Figure 5 is perspective view of the spa jet in the section of bath wall.

DETAILED DESCRIPTION OF PREFERRED FORM

Figure 1 shows a spa bath. Conventionally spa jets are mounted through an aperture
25 formed in the bath wall at various locations around the bath and each fitting comprises a back body part which is positioned at the exterior (outside) of the bath wall and a front body part which screws from the other side of the bath wall into the back body part to fix the fitting in position in the bath wall. The bath includes an outlet fitting O.

30 In Figures 2 to 5 a whole bath is not shown but only a circular section of bath wall indicated at B.

The preferred form spa jet fitting of the invention is mounted so that its front face does not protrude beyond, and over the major portion of its surface area is substantially flush with, the surrounding surface of the bath wall B.

- 5 The fitting comprises a front ring 1, a forward part 2, a rear part 3, a back nut 4. The forward part 2 includes a tail which passes through an aperture in the bath wall and has a threaded end which threadedly connects with the rear part 3 at 7. Back nut 4 threadedly mounts on the exterior of rear part 3 so that it can be screwed up against the rear side of the bath wall to lock the fitting in place in the bath wall.

10

- To mount the spa jet the forward part 2 and rear part 3 are separated. The forward part 2 is inserted through the aperture in the bath wall from the inside of the bath, and is threaded into the rear part 3 carrying the back nut 4, which is positioned on the other side of the bath wall. The back nut 4 is then tightened on the rear part 3 against the rear surface of the bath wall, which fixes the fitting in the bath wall. The front ring 1 is then snap fitted into the forward part 2 to the position shown in the drawings. Alternatively the front ring 1 could be screw threaded into the forward part 2. In the preferred form as shown, when the forward ring 1 is in position the front face of the forward ring is substantially flush with the bath wall B.

20

The forward face 4a of the back nut 4 is inwardly tapered so that as the back nut 4 is tightened against the rear of the typically vacuum formed recess in the bath wall, this tends to self-centre the fitting.

- 25 The fitting is shown mounted in a recess formed in bath wall B, which recess has inwardly angled side walls. A tapered edge portion 2a about the periphery of forward part 2 is tapered with reducing diameter toward the rear fitting as shown, which also assists in centering the fitting.

- 30 A water pipe from the pump of the spa bath and an air pipe can connect to the fitting at 10 and 11 respectively. In Figure 2 arrow W indicates the path of water through the spa jet in use, and arrow A indicates the path of air into the fitting to mix with the water.

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In the preferred fitting the outer peripheral part of front ring 1 is sloped below the surrounding surface of the bath wall as shown, but in an alternative form the front face of ring 1 maybe flat and substantially flush with the surrounding bath wall over its entire diameter.

The preferred form fitting thus described comprises front ring 1, forward part 2, rear part 3, back nut 4. In an alternative form of the invention the fitting could comprise simply a body with a tubular tail which projects through the bath wall and a back nut which threads onto a tubular tail to clamp the fitting to the bath wall. In such a fitting the leading face of back nut 4 may still be tapered so that as the back nut is tightened against the rearside of a shaped recess with angled side walls in the bath wall, this leads to self centering of the fitting as described.

In another alternative form of the fitting the back nut may be integrally moulded with the rear part 3 of the fitting. That is, there is no separate back nut but the fitting is tightened in place by a forward part 2 of the fitting threading into a rear part 3 on either side of the bath wall. The leading face of the rear part 3 which engages the rear surface of the bath is preferably tapered as shown for the leading edge of the back nut 4. In use once the forward part of the fitting has been screwed into the rear part of the fitting to fix the fitting in the bath wall, then the front ring 1 is snap fitted or screwed into place.

The fitting may optionally include a central eyeball nozzle which enables the direction of the water jet from the fitting to be adjusted.

To assist adjustment of the spa jet by a bather in use the front face 1 may include one or more shallow recesses into which a users finger or fingers may fit to facilitate turning of the to adjust the air flow.

A flush mounted spa fitting as described provides a substantial additional user comfort relative to a fitting which is proud of the bath wall surface as is conventional (or recessed more deeply into the bath wall surface), and thus maybe provided in a wall

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section of a bath against which a bather will lean back in use for example, without causing discomfort to the user.

5 The fitting shown in the drawings is shown mounted in a flat portion of a bath wall but in an alternative form could be mounted in a slightly curved portion of the bath wall and the front face of front ring 1 may be slightly dished to remain as flush as possible with the bath wall surface.

10 The invention and the preferred form have been described above as a spa bath water outlet (or inlet) fitting but it is also possible that the invention may be used as a light fitting to mount a low voltage light in a spa bath base or wall or similar, in which event the front ring 1 of the fitting would include a glass panel with a bulb mounted behind the glass panel.

15 The foregoing describes the invention including a preferred form thereof. Alterations and modifications as will be obvious to those skilled in the art are intended to be incorporated in the scope hereof as defined in the accompanying claims.

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CLAIMS:

1. A spa bath (as herein defined) including at least one spa jet fitting having a front face exposed to the interior of the bath cavity which does not protrude beyond the surface of the bath wall around the spa fitting.
2. A spa bath according to claim 1 wherein at least a major portion of the front face of the fitting is substantially flush with the surrounding surface of the bath wall.
3. A spa bath according to claim 1 wherein the fitting is a water jet outlet fitting and wherein the front face of the fitting comprises a ring which is rotatable to adjust water or air flow from the fitting.
4. A spa bath fitting according to claim 3 wherein the front face of the fitting includes one or more shallow recesses into which a users finger or fingers may fit to facilitate rotation of said ring to adjust water or air flow from the fitting.
5. A spa bath fitting according to any one of claims 1 to 4 wherein the fitting is a water jet outlet fitting and includes a central eyeball nozzle which is movable to adjust the direction of water flow from the fitting.
6. A spa bath (as herein defined) including at least one spa jet fitting mounted in a recess formed in the wall of the bath said recess having inwardly angled side walls, the fitting comprising a front part which is exposed to the interior of the bath and which includes an edge portion about the periphery of the front part which is tapered with reducing diameter toward a rear part of the fitting, which tapered peripheral edge portion of the front part seats in the recess in the side wall of the bath and centers the spa fitting.
7. A spa bath according to claim 6 wherein said front part includes a front ring which provides the wide diameter front face of the fitting.

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8. A spa bath according to claim 6 wherein the fitting is a water jet outlet fitting and wherein the front face of the fitting comprises a ring which is rotatable to adjust water or air flow from the fitting.
- 5 9. A spa bath according to claim 8 wherein the front face of the fitting includes one or more shallow recesses into which a users finger or fingers may fit to facilitate rotation of said ring to adjust water or air flow from the fitting.
- 10 10. A spa bath according to any one of claims 6 to 9 wherein the fitting includes a central eyeball nozzle which is movable to adjust the direction of water flow from the fitting.
- 15 11. A spa bath fitting for mounting in a recess formed in the wall of a bath said recess having inwardly angled side walls, the fitting comprising a rear part or back nut having a leading edge which contacts the rear surface of the recess in the bath wall, which leading edge is tapered with a reducing diameter toward a rear part of the fitting which assists in centering the fitting in the recess in the side wall of the bath.
- 20 12. A spa bath fitting according to claim 11 which comprises separate threadedly coupled front and rear parts and a separate back nut for fixing the fitting to the bath so as to enable the position of the front face of the fitting to be adjusted relative to the rear part separate from tightening of the back nut to fix the fitting in place, enabling adjustment during installation of the fitting of the position of the exposed front face of the fitting relative to the bath wall.
- 25 13. A spa bath according to claim 12 wherein the fitting is a water jet outlet fitting and wherein the front face of the fitting comprises a ring which is rotatable to adjust the water or air flow from the fitting.
- 30 14. A spa bath fitting according to either one of claims 12 and 13 wherein the front part includes a separate front ring which provides the wide diameter front face of the fitting.

15. A spa bath fitting according to claim 13 wherein the front face of the fitting includes one or more shallow recesses into which a users finger or fingers may fit to facilitate rotation of the to adjust water or air flow from the fitting.
- 5 16. A spa bath fitting according to any one of claims 12 to 15 wherein the fitting is a water jet outlet fitting and includes a central eyeball nozzle which is movable to adjust the direction of water flow from the fitting.
17. A spa bath fitting including:
- 10 a front part including a wide diameter front face which is exposed to the interior of the bath when the fitting is mounted in the side wall or base of a bath,
- a rear part which is positioned on the rear side of the bath wall or base when the fitting is mounted in a bath and with which the front part is threadedly connected, and
- a back nut mounted on the rear part for fixing the fitting in the bath wall or base.
- 15 18. A spa bath fitting according to claim 19 wherein the forward part includes a tail for passing through an aperture in the bath wall or base and which has a threaded end which threadedly connects with the rear part of the fitting and wherein the back nut threadedly mounts on the exterior of rear part of the fitting so that the back nut can be
- 20 screwed up against the rear side of a bath wall or base to lock the fitting in place in the bath wall or base.
19. A spa bath fitting according to claim 18 wherein the tail of the forward part of the fitting is externally threaded and the rear part comprises a complementary threaded
- 25 bore into which the threaded tail of the forward part connects.
20. A spa bath fitting according to any one of claims 17 to 19 wherein the front part includes a separate front ring which provides the wide diameter front face of the fitting.
- 30 21. A spa bath fitting according to claim 20 wherein the front ring snap-fit connects to another section of the forward part of the fitting.

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22. A spa bath fitting according to claim 20 wherein the front ring screw threadedly connects to another section of the forward part of the fitting.
23. A spa bath fitting according to any one of claims 17 to 22 wherein a forward
5 face of the back nut is tapered to assist in self-centering the fitting during the tightening of the back nut against the rear of the bath wall or base.
24. A spa bath fitting according to any one of claims 17 to 23 wherein a peripheral
10 edge portion of the forward part is tapered with reducing diameter toward the rear part of the fitting to assist in centering the fitting in a recess in the wall or base of a bath.
25. A spa bath according to any one of claims 17 to 24 wherein the fitting is a water
jet outlet fitting and wherein the front face of the fitting comprises a ring which is
15 rotatable to adjust the water or air flow from the fitting.
26. A spa bath fitting according to claim 25 wherein the front face of the fitting
includes one or more shallow recesses into which a users finger or fingers may fit to
facilitate rotation of the ring to adjust water or air flow from the fitting.
- 20 27. A spa bath fitting according to any one of claims 17 to 26 wherein the fitting is a
water jet outlet fitting and includes a central eyeball nozzle which is movable to adjust
the direction of water flow from the fitting.
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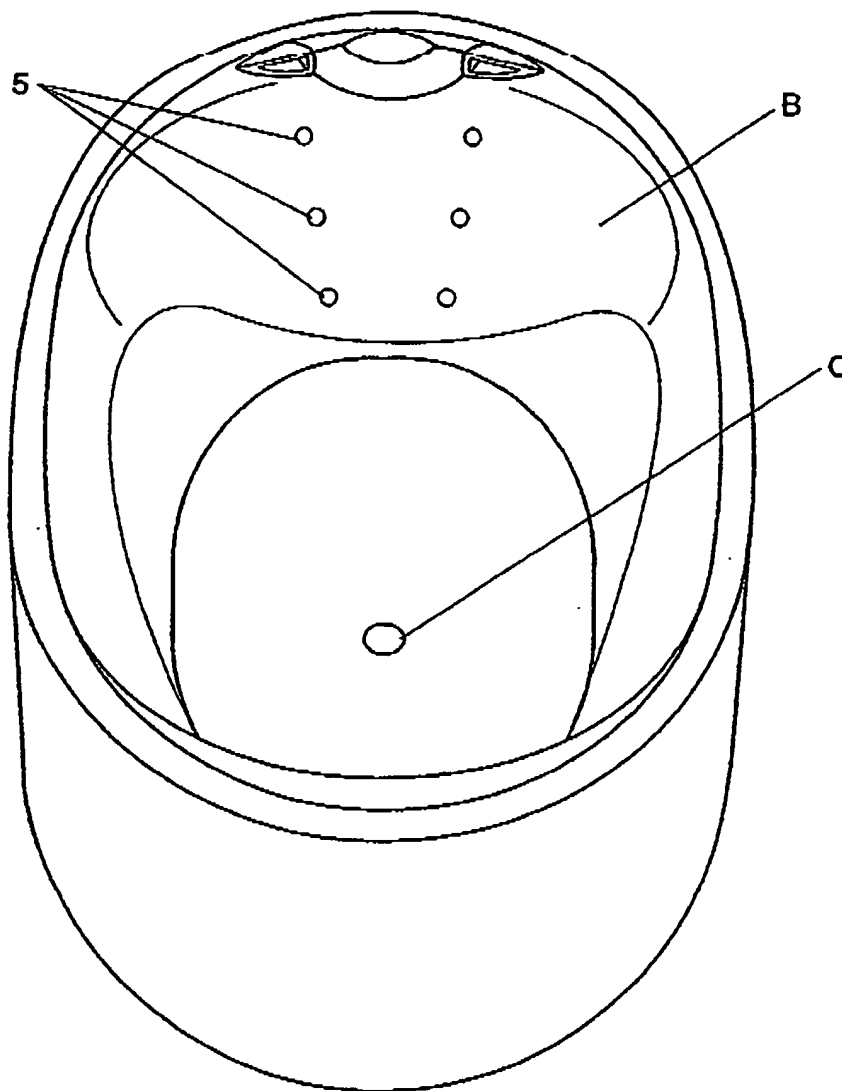


FIGURE 1

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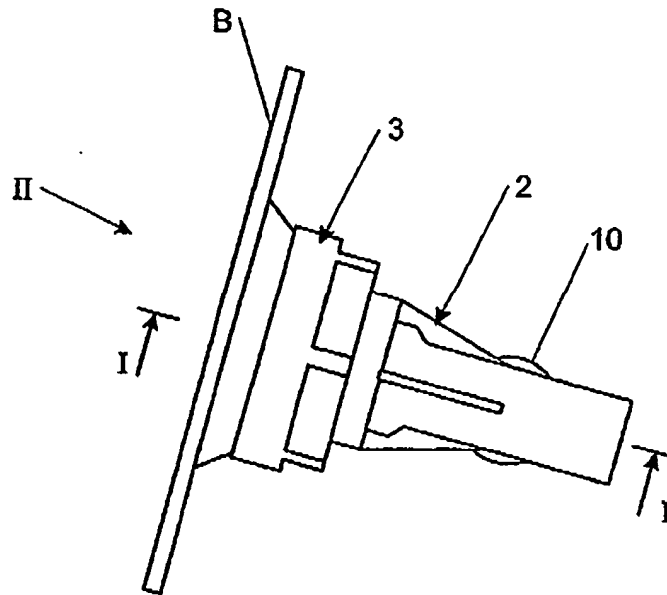


FIGURE 2

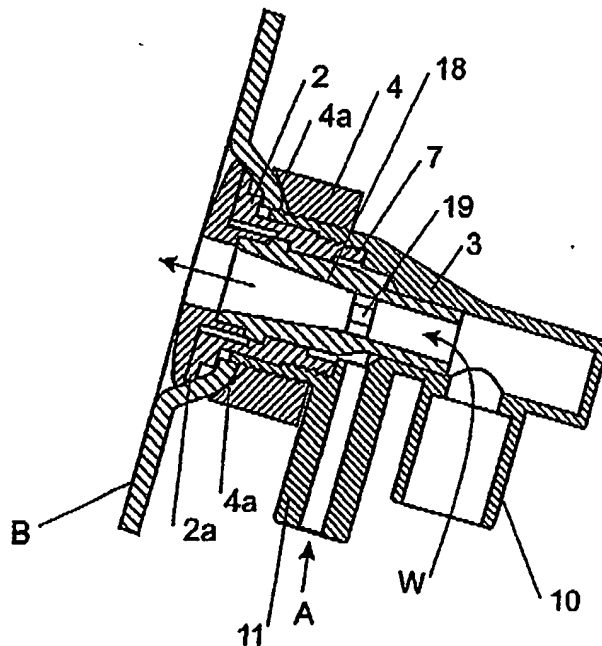


FIGURE 3

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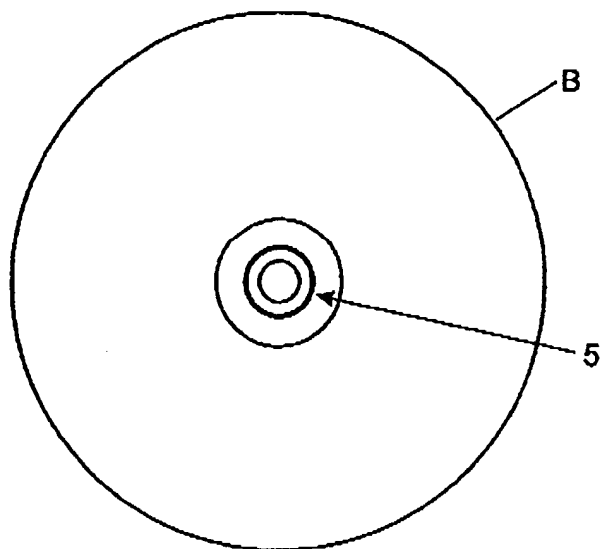


FIGURE 4

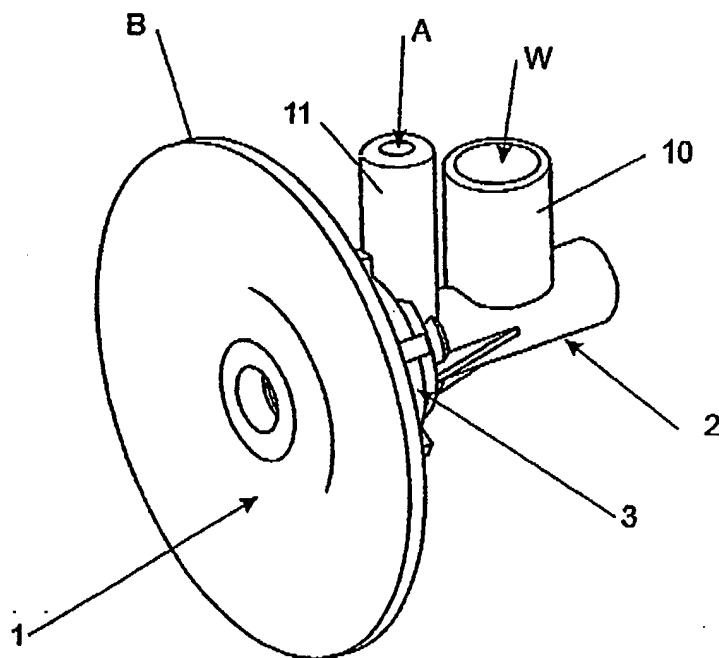


FIGURE 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ2003/000283

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: A47K 3/02, 3/022 A61H 33/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT, A47K 3/02, 3/022 A61H 33/00, key words SPA+, JET+, NOZZLE+, FLUSH+, SMOOTH+,
BATH+, RECESS+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/23993 A (PINCIARO) 20 May 1999 Whole document	1-27
A	GB 2319195 A (WATKINS MANUFACTURING CORPORATION) 20 May 1998 Whole document	1-27
P,A	CA 2419129 A (PENTAIR POOL PROD INC) 15 August 2003 Whole document	1-27

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
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Date of mailing of the international search report

18 MAR 2004

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member		
WO	9923993	AU	13126/99	US	5920924
GB	2319195	AU	32426/97	CA	2211509
		GB	2321403	US	5742953
CA	2419129	NONE			
END OF ANNEX					